

GenCore version 5.1.1.3  
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OM nucleic - nucleic search, using sw model

Run on: February 16, 2003, 15:49:44 ; Search time 203.076 Seconds  
(without alignments)  
14704.597 Million cell updates/sec

Title: US-09-497-967-1  
Perfect score: 1326  
Sequence: 1 atgaataataattttatt.....ttattttttttattttg 1326  
Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 2185239 seqs, 1125999159 residues  
Total number of hits satisfying chosen parameters: 4370478

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000  
Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database :				N_Geneseq_101002.*			
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23:	/SIDS2/gcgdata/geneseq/geneseq-emb1/NA2001B.DAT.*						
24:	/SIDS2/gcgdata/geneseq/geneseq-emb1/NA2002.DAT.*						

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1326	100.0	1326	21	AAA97036
2	1326	100.0	2486	21	AAA97037
3	1324.4	99.9	1326	21	AAA52135
4	1323.4	99.8	2811	21	AAA52134
5	254.2	19.2	1404	21	AAA52136
6	252.6	19.0	1404	21	AAA97038
7	252.6	19.0	1410	21	AAA97060
8	100	7.5	100	21	AAA97039
9	99	7.5	119	21	AAA97070

10	99	7.5	162	21	AAA97069	i-antigen encoding
11	99	7.5	199	21	AAA97068	48kd i-antigen RAC
12	99	7.5	202	21	AAA97067	48kd i-antigen gen
13	72.2	5.4	1635	22	ABA49946	Human breast cell
14	72.2	5.4	1635	22	ABA67865	Human foetal liver
15	72.2	5.4	1635	22	ABA34921	Probe #13387 for g
16	72.2	5.4	1635	22	AAK16270	Human brain expres
17	72.2	5.4	1635	22	AAK42016	Human bone marrow
18	72.2	5.4	1635	22	AAI22780	Probe #12713 for g
19	72.2	5.4	1635	22	AAI48082	Probe #16768 used t
20	72.2	5.4	1635	22	AAI08454	Human genome-deriv
21	72.2	5.4	1635	24	ABSI6047	Human breast cell
22	72.2	5.4	1973	22	ABA44805	Human foetal liver
23	72.2	5.4	1973	22	ABA55261	Probe #3471 for g
24	72.2	5.4	1973	22	ABA25005	Human brain expres
25	72.2	5.4	1973	22	AAK03514	Human bone marrow
26	72.2	5.4	1973	22	AAK28970	Probe #3489 for g
27	72.2	5.4	1973	22	AAI13556	Probe #3604 used t
28	72.2	5.4	1973	22	AAI34918	Probe #3437 used t
29	72.2	5.4	1973	22	AAI03446	Human genome-deriv
30	72.2	5.4	1973	24	ABSO3504	Mouse SRY-related
31	64.6	4.9	10266	17	ABT33007	Mouse ischaemic co
32	64	4.8	2215	24	ABI99688	DNA encoding novel
33	63.6	4.8	3297	23	AA991437	55kd i-antigen syn
34	63.2	4.8	1404	21	AAA97040	Synthetic 55kd i-a
35	63.2	4.8	1404	21	AAA97065	Synthetic I. Multi
36	63.2	4.8	1410	21	AAA97089	PKS 741 Insert con
37	63	4.8	14704	13	AAQ20685	Polyglutamine trac
38	60	4.5	486	22	AA75507	Antigen tc-7a gene
39	59.8	4.5	543	13	AAQ23092	Human breast cell
40	59.6	4.5	439	22	ABA49878	Human foetal liver
41	59.6	4.5	439	22	ABA67796	Probe #13320 for g
42	59.6	4.5	439	22	ABA34854	Human brain expres
43	59.6	4.5	439	22	AAK16207	Human bone marrow
44	59.6	4.5	439	22	AAK41953	Probe #12651 for g
45	59.6	4.5	439	22	AAI22718	

ALIGNMENTS

RESULT 1	
AAA97036	
ID	AAA97036 standard; DNA; 1326 BP.
XX	
AC	AAA97036;
XX	
DT	18-DEC-2000 (first entry)
XX	
DE	48kd i-antigen nucleotide sequence.
XX	
DE	
XX	
KW	Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;
KW	white spot disease; freshwater fish; immune response; infection control.
XX	
OS	Ichthyophthirius multifiliis.
XX	
PN	WO200046373-A1.
XX	
PD	10-AUG-2000.
XX	
PF	04-FEB-2000; 2000WO-US02962.
XX	
PR	04-FEB-1999; 99US-0118634.
PR	02-MAR-1999; 99US-012372.
PR	17-MAR-1999; 99US-0124905.
PR	27-APR-1999; 99US-0131121.
XX	
PA	(UYGE-) UNIV GEORGIA RES FOUND INC.
PA	(CORR ) CORNELL RES FOUND INC.
PA	(CLAR/) CLARK T G.
PA	(DICK/) DICKERSON H W.
XX	
XX	(LINT/) LIN T.

Clark TC, Dickerson HW, Lin T;  
WPI; 2000-506071/45.

Novel i-antigen polypeptides and polynucleotides from *Ichthyophthirius multifiliis*, useful for prophylaxis and treatment of *Ichthyophthirius* infection in fish -

Claim 2; Figure 3; 144pp; English.

This invention relates to novel i-antigen polypeptide sequences. I-antigens or immunolisation antigens are common to a variety of hymenostomatid ciliates and their expression varies in response to environmental stimuli. This invention relates to i-antigens in *Ichthyophthirius multifiliis*, a protozoan which is an obligate parasite of freshwater fish causing ichthyophthiriasis or white spot disease. The invention includes two polypeptide and polynucleotide sequences for two i-antigens, of 48 and 55 kD. Also included in the invention are antibodies capable of binding to the nucleotide sequences and a method for identifying *I. multifiliis* serotypes using the nucleotide sequences. A composition (containing the i-antigen nucleotide) capable of eliciting an immune response in fish is useful for prophylaxis, treatment or for controlling *I. multifiliis* infection in fish. Polynucleotide or protein vaccines comprising a portion of the amplified product encoding an antigenic i-antigen polypeptide obtained is also useful for treating or preventing *I. multifiliis* infection in fish. Sequences AAA97036-A97042, AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene fragments identified in the invention. Sequences AAA97043-A97064 (excluding AAA97060) and AAA97071-A97088 represent primers used in the isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and AAB25893-B25906 represent i-antigen protein and peptide sequences.

Query Sequence 1326 BP; 371 A; 251 C; 253 G; 451 T; 0 other;

Query Match 100.0%; Score 1326; DB 21; Length 1326;  
Best Local Similarity 100.0%; Pred. No. 7.1e-298;  
Matches 1326; Conservative 0; Mismatches 0; Indels 0; Gaps

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DB 181 GAAGCTAATGTGTAATTAACCTTTCGCAGCAAAATGCTGCTAGAGGTATATGTGTACCA 240

QY 241 TGCACAAATAACAGATAGGCTCTGTTACCAATGCAGGTGACTTAGCTACTTTTAGGCCACA 300  
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PN W0200046373-A1.  
XX 10-AUG-2000.  
XX 04-FEB-2000; 2000WO-US02962.  
XX 04-FEB-1999; 99US-0118634.  
PR 02-MAR-1999; 99US-0122372.  
PR 17-MAR-1999; 99US-0124905.  
PR 27-APR-1999; 99US-0131121.  
XX (UYGE-) UNIV GEORGIA RES FOUND INC.  
PA (CORR ) CORNELL RES FOUND INC.  
PA (CLARK/) CLARK T G.  
PA (DICK/) DICKERSON H W.  
PA (LINT/) LIN T.  
XX Clark TG, Dickerson HW, Lin T;  
PI WPI; 2000-506071/45.  
DR Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius  
XX multiliis, useful for prophylaxis and treatment of Ichthyophthirius  
XX infection in fish  
PS Disclosure; Figure 1; 144pp; English.  
XX This invention relates to novel i-antigen polypeptide sequences.  
CC I-antigens or immobilisation antigens are common to a variety of  
CC hymenostomatid ciliates and their expression varies in response to  
CC environmental stimuli. This invention relates to i-antigens in  
CC Ichthyophthirius multiliis, a protozoan which is an obligate parasite  
CC of freshwater fish causing ichthyophthiriasis or white spot disease. The  
CC invention includes two polypeptide and polynucleotide sequences for two  
CC i-antigens of 48 and 55 kb. Also included in the invention are  
CC antibodies capable of binding to the nucleotide sequences and a method  
CC for identifying i. multiliis serotypes using the nucleotide sequences.  
CC A composition (containing the i-antigen nucleotide) capable of eliciting  
CC an immune response in fish is useful for prophylaxis, treatment or for  
CC controlling i. multiliis infection in fish. Polynucleotide or protein  
CC vaccines comprising a portion of the amplified product encoding an  
CC antigenic i-antigen polypeptide obtained is also useful for treating or  
CC preventing i. multiliis infection in fish. Sequences AAA97036-A97042,  
CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene  
CC fragments identified in the invention. Sequences AAA97043-A97064  
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the  
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and  
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.  
XX  
SQ Sequence 2486 BP; 896 A; 310 C; 321 G; 959 T; 0 other;  
Query Match 100.0%; Score 1326; DB 21; Length 2486;  
Best Local Similarity 100.0%; Pred. No. 8.7e-298;  
Matches 1326; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
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DB ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
433 ATGAATAATATATTTTATTAATTTTAAATTTCTTTTATTTATTTATTAATGAATAGAGCT 492  
QY 61 GTTCATGTCCTGATGGTACTTAGACTCAAGCTGGATGACTGATGAGTGCTGCTGAT 120  
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QY 241 TGCCAAATAAACAGAGTAGGCTCTGTTACCAATGCAGGTGACTTAGCTACTTTAGCCACA 300  
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Db 673 TGCCAAATAAACAGAGTAGGCTCTGTTACCAATGCAGGTGACTTAGCTACTTTAGCCACA 732  
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733 TAAATGAGTACTTAATGCTTACTGCTACTGCACACTGCACCTTGATGAGTGCACAGATGTTTTT 792  
QY 361 GATAGATCAGCGGCATTAATGCTTAAATGCAACCTCACTTTTACTATTAATGTTGGTGTCT 420  
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853 CCTAAGGTGAAGCTCCTGGGCTTTAAGCTTTTGGCTGCTGGCTGCAGGTGCTT 912  
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RESULT 4
AAA52134
ID AAA52134 standard; DNA; 2811 BP.
XX
AC AAA52134;
XX
DT 04-DEC-2000 (first entry)
XX
DE pBICH3 construct containing 48 kDa I-antigen gene.
XX
KW BTU1: beta-tubulin; protein expression system; negative selection;
KW pacitaxel sensitivity; cell surface; antigen; protozoa; ciliate;
KW live vaccine; Ichthyophthius multifiliis; immobilization-antigen;
KW i-antigen; freshwater; fish; protozoacide; pBICH3; ds.
XX
OS Chimeric - Tetrahymena thermophila.
OS Chimeric - Ichthyophthius multifiliis.
XX
FH Key Location/Qualifiers
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FT /transl_except= (pos:1078..1080, aa:Gln)
FT /codons= (seq: "TAA", aa:Gln)
FT misc_feature 991..999
FT /*tag= b
FT /note= "Cloning residual from parent construct HMF1::neo"
XX
PN WO200046381-A1.
XX
PD 10-AUG-2000.
XX
PF 04-FEB-2000; 2000WO-US02966.
PR 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX
```

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PA (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (GAER/) GAERTIG J.
PA (DICK/) DICKERSON H W.
PA (CLAR/) CLARK T G.
XX
XX Gaertig J, Dickerson HW, Clark TG;
XX
XX WPI; 2000-514962/46.
XX P-PSDB; AAY97176.
XX
XX Recombinant expression systems for expressing heterologous nucleic
XX acids and producing recombinant protein, comprises nonpathogenic
XX protozoa such as Tetrahymena resistant to pacitaxel
XX
XX Example 1; Fig 2B; 83pp; English.
XX
XX Tetrahymena thermophila expresses two major beta-tubulin genes (BTU1 and
XX BTU2), which encode identical beta-tubulin proteins. Either of these two
XX genes (but not both at once) can be disrupted without a detectable change
XX in the cell phenotype. A K350L substitution in the BTU1 beta-tubulin
XX protein confers increased resistance to microtubule-depolymerizing drugs
XX and increased sensitivity to pacitaxel, a microtubule-stabilizing drug.
XX Cells carrying the Btul-1K350M allele can be transformed to pacitaxel
XX resistance by gene replacement of Btul-1K350M with a wild-type Btul gene
XX fragment, eliminating the need to incorporate a means for positive
XX selection. Where the host organism is not a T. thermophila mutant
XX containing the Btul-1K350M allele, BTU1::neo1 construct, which
XX substitutes the coding region of the neo1 gene (conferring resistance to
XX paromomycin) for that of BTU1, can be used to generate Btul gene knockouts
XX and for positive selection. Heterologous nucleic acids (especially
XX encoding antigenic polypeptides) can be inserted into a Btu gene for
XX successful cell-surface expression that is maintained by way of negative
XX selection. Preferred expression vectors disrupt the Btul-1K350M gene by
XX homologous recombination-mediated insertion of a heterologous nucleic
XX acid, thereby restoring resistance to pacitaxel in the resulting
XX transgenic host. Transgenic ciliated protozoa are useful as live vaccines
XX for stimulating an immune response in a vertebrate. The transgenic
XX protozoan host cells are also useful for producing polyclonal antibodies
XX (claimed). In particular, Tetrahymena expressing Ichthyophthius
XX multifiliis immobilization-antigen (I-antigen) protein on their surface
XX are effective vehicles for vaccination of freshwater fish against
XX infection by I. multifiliis.
XX
XX Sequence 2811 BP; 957 A; 438 C; 434 G; 982 T; 0 other;
SQ
Query Match 99.8%; Score 1323.4; DB 21; Length 2811;
Best Local Similarity 99.9%; Pred. No. 3.6e-297;
Matches 1324; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Qy 2 TGAATAATAATATTTTATTAATTTTATTAATTTTATTAATTTTATTAATTAATTAAGACTG 61
Db 998 TGAATAATAATATTTTATTAATTTTATTAATTTTATTAATTTTATTAATTAAGACTG 1057
Qy 62 TTCCATGCTGATGGTACTTAGACTCAAGCTGGATTGACTGTAGTGTAGGTGCTGCTGATC 121
Db 1058 TTCCATGCTGATGGTACTTAGACTCAAGCTGGATTGACTGTAGTGTAGGTGCTGCTGATC 1117
Qy 122 TTGGTACTTGTGTTAATTCGACAGCTTAATTTTACTATATATGTTGGTGTCTTTAAGGAG 181
Db 1118 TTGGTACTTGTGTTAATTCGACAGCTTAATTTTACTATATATGTTGGTGTCTTTAAGGAG 1177
Qy 182 AAGCTAATGGTAATTAACCTTTCCGACCAATAATGCTGTAGAGGTATATGTGTACCAT 241
Db 1178 AAGCTAATGGTAATTAACCTTTCCGACCAATAATGCTGTAGAGGTATATGTGTACCAT 1237
Qy 242 GCCAATAAACAGAGTAGGCTCTTTACCAATGCAGGTGACTTAGCTACTTTAGCCACAT 301
Db 1238 GCCAATAAACAGAGTAGGCTCTTTACCAATGCAGGTGACTTAGCTACTTTAGCCACAT 1297
Qy 302 AATGCAGTACTTAATGTCTTACTGGCACTGCACCTTGATGATGAGTGCACAGATGTTTTTG 361
Db 1298 AATGCAGTACTTAATGTCTTACTGGCACTGCACCTTGATGATGAGTGCACAGATGTTTTTG 1357
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QY 362 ATAGATCAGCCGATAATGTTAAATGCAAAACCTAACTTTTACTATAATGGTGGTTCTC 421  
D5 1358 ATAGATCAGCCGATAATGTTAAATGCAAAACCTAACTTTTACTATAATGGTGGTTCTC 1417  
QY 422 CTTAAGGTGAAGCTCCTGGCGTTTAAAGTTTGTGCTGGTGGTGGCGCTGCAGGTTGG 481  
D5 1418 CTTAAGGTGAAGCTCCTGGCGTTTAAAGTTTGTGCTGGTGGTGGCGCTGCAGGTTGG 1477  
QY 482 CTGCGCTTACTAGTAAATGTTGCTGCTGCACTAAACAAACGATTCCTGCCACTG 541  
D5 1478 CTGCGCTTACTAGTAAATGTTGCTGCTGCACTAAACAAACGATTCCTGCCACTG 1537  
QY 542 CAGTGCCTAAGCTAATTTAGCCACATAATGTAGCAATTAATGTCCTACTGGCACTGTAC 601  
D5 1538 CAGTGCCTAAGCTAATTTAGCCACATAATGTAGCAATTAATGTCCTACTGGCACTGTAC 1597  
QY 602 TTGATGATGAGTGACACTGTTGTTTAAATACATGACCCACATTAATGTTAAATGCGAC 661  
D5 1598 TTGATGATGAGTGACACTGTTGTTTAAATACATGACCCACATTAATGTTAAATGCGAC 1657  
QY 662 CTAACTTTTACTATAATGTTGTTTCTCTTAAGGTGAAGCTCCTGGCGTTTAAAGTTTGG 721  
D5 1658 CTAACTTTTACTATAATGTTGTTTCTCTTAAGGTGAAGCTCCTGGCGTTTAAAGTTTGG 1717  
QY 722 CTGCTGGTGTGCGCTGCAGGTGTTGCTGCGTTTACTAGTTAAATGTTGCTACTTGGCAAA 781  
D5 1718 CTGCTGGTGTGCGCTGCAGGTGTTGCTGCGTTTACTAGTTAAATGTTGCTACTTGGCAAA 1777  
QY 782 TAAACAAAACGATTTCTCTGCACTGCGAGTGGCTTAAGCTAAATTTAGCCACATAATGCA 841  
D5 1778 TAAACAAAACGATTTCTCTGCACTGCGAGTGGCTTAAGCTAAATTTAGCCACATAATGCA 1837  
QY 842 GTACTTAATGTCACACTGCACTGCAATTAAGAGGAGTGCACCTGTTTAAAGTTTAAAT 901  
D5 1838 GTACTTAATGTCACACTGCACTGCAATTAAGAGGAGTGCACCTGTTTAAAGTTTAAAT 1897  
QY 902 CATCCACATAATGTTCTTAATGCAATGCTAAATTAATTTTAAATGGTAAATTCGAAGCAG 961  
D5 1898 CATCCACATAATGTTCTTAATGCAATGCTAAATTAATTTTAAATGGTAAATTCGAAGCAG 1957  
QY 962 GTAAAGTTTAAAGTGTCCAGTAAAGTAAACTACTCCAGCAGTACTCCAGTACT 1021  
D5 1958 GTAAAGTTTAAAGTGTCCAGTAAAGTAAACTACTCCAGCAGTACTCCAGTACT 2017  
QY 1022 ATACTGCTACTTAAGCCACATAATGTTGACCCACATGCTCCTGCTGCTGCTGCTGCTGCTG 1081  
D5 2018 ATACTGCTACTTAAGCCACATAATGTTGACCCACATGCTCCTGCTGCTGCTGCTGCTGCTG 2077  
QY 1082 ATGAACATCAACTAATTTTGTAGCTTCCGCACTGAATGTACTAAATGTTCTGCTGGCT 1141  
D5 2078 ATGAACATCAACTAATTTTGTAGCTTCCGCACTGAATGTACTAAATGTTCTGCTGGCT 2137  
QY 1142 TTTTGTGATCAAAACAACTGTTTACAGCAGTACTGATACATGCTACTGAATGCTACTA 1201  
D5 2138 TTTTGTGATCAAAACAACTGTTTACAGCAGTACTGATACATGCTACTGAATGCTACTA 2197  
QY 1202 AAAAATTAACCTCTGCTGCGACAGCTAAAGTATATGCTGAAGCTACTCAAAAGTATAT 1261  
D5 2198 AAAAATTAACCTCTGCTGCGACAGCTAAAGTATATGCTGAAGCTACTCAAAAGTATAT 2257  
QY 1262 GCGCTCCACTACTTTCGCTAAATTTTATCGATTTTCTTATTTATTTCTTCTTAT 1321  
D5 2258 GCGCTCCACTACTTTCGCTAAATTTTATCGATTTTCTTATTTATTTCTTCTTAT 2317  
QY 1322 TATTG 1326  
D5 2318 TATTG 2322  
RESULT 5  
AAA52136  
ID AAA52136 standard; DNA; 1404 BP.  
XX

AA52136;  
04-DEC-2000 (first entry)  
55 kDa i-antigen gene.  
BTU1; beta-tubulin; protein expression system; negative selection;  
paclitaxel sensitivity; cell surface; antigen; protozoa; ciliate;  
live vaccine; Ichthyophthius multifiliis; immobilization-antigen;  
i-antigen; freshwater; fish; protozoacide; ds.  
OS Ichthyophthius multifiliis.  
XX Key Location/Qualifiers  
FH 1..1404  
FT /\*tag= a  
FT /codon= (seq: "TAA", aa:Gln)  
FT /product= 55\_kDa\_i-antigen  
FT /partial  
XX WO200046381-A1.  
XX 10-AUG-2000.  
XX 04-FEB-2000; 2000WO-US02966.  
XX 04-FEB-1999; 99US-0118634.  
XX 02-MAR-1999; 99US-0122372.  
XX 17-MAR-1999; 99US-0124905.  
XX 27-APR-1999; 99US-0131121.  
XX (UYGE-) UNIV GEORGIA RES FOUND INC.  
XX (GAER/) GAERTIG J.  
XX (DICK/) DICKERSON H W.  
XX (CLAR/) CLARK T G.  
XX Gaertig J, Dickerson HW, Clark TG;  
XX WPI; 2000-514962/46.  
XX P-PSDB; AAY97177.  
XX Recombinant expression systems for expressing heterologous nucleic  
XX acids and producing recombinant protein, comprises nonpathogenic  
XX protozoa such as Tetrahymena resistant to paclitaxel  
XX Disclosure; Fig 3B; 83pp; English.  
XX Tetrahymena thermophila expresses two major beta-tubulin genes (BTU1 and  
XX BTU2), which encode identical beta-tubulin proteins. Either of these two  
XX genes (but not both at once) can be disrupted without a detectable change  
XX in the cell phenotype. A K350L substitution in the BTU1 beta-tubulin  
XX protein confers increased resistance to microtubule-depolymerizing drugs  
XX and increased sensitivity to paclitaxel, a microtubule-stabilizing drug.  
XX Cells carrying the Btu1-IK350M allele can be transformed to paclitaxel  
XX resistance by gene replacement of Btu1-IK350M with a wild-type BTU1 gene  
XX fragment, eliminating the need to incorporate a means for positive  
XX selection. Where the host organism is not a T. thermophila mutant  
XX substituting the Btu1-IK350M allele, BTU1::neol construct, which  
XX contains the coding region of the neol gene (conferring resistance to  
XX paromycin) for that of Btu1, can be used to generate BTU1 gene knockouts  
XX and for positive selection. Heterologous nucleic acids (especially  
XX encoding antigenic polypeptides) can be inserted into a Btu gene for  
XX successful cell-surface expression that is maintained by way of negative  
XX selection. Preferred expression vectors disrupt the Btu1-IK350M gene by  
XX homologous recombination-mediated insertion of a heterologous nucleic  
XX acid, thereby restoring resistance to paclitaxel in the resulting  
XX transgenic host. Transgenic ciliated protozoa are useful as live vaccines  
XX for stimulating an immune response in a vertebrate. The transgenic  
XX protozoan host cells are also useful for producing polyclonal antibodies  
XX (claimed). In particular, Tetrahymena expressing Ichthyophthius  
XX multifiliis immobilization-antigen (i-antigen) protein on their surface  
XX are effective vehicles for vaccination of freshwater fish against  
XX infection by I. multifiliis.

XX	Sequence	1404 BP; 447 A; 241 C; 256 G; 460 T; 0 other;
50	Query Match	19.28; Score 254.2; DB 21; Length 1404;
	Best Local Similarity	56.7%; Pred. No. 2.7e-49;
	Matches 661; Conservative	0; Mismatches 393; Indels 111; Gaps 6;
QY	167	GTGCTGCTTAAGGAGAGCTAATGGTAATTAACCTTTCCGACGCAAAATGAATGCTGCTAGAG 226
DB	344	GTGTTAATGTGAGAAATTAATTTTATTAATGAAATGCTCCAAATTTTAATGCAGGTGCTA 403
QY	227	GTATATGTGACCAATGAATGAAGAGTAGGCTCTGTTACCAATGACAGTGACTTAG 286
DB	404	GTACATGCACAGCTGTCCGGTAAACAGAGTTGGTGCTGATTAAGTGGTGAATGCCG 463
QY	287	CTACTTTAGGCACATGAATGAGTACATTAATGCTCTACTGCACTGCACTTGATGATGGAG 346
DB	464	CTACCATAGTGCATATGTAAGTCCGATGCTCTACTGCTACTGCACTTGATGATGGAG 523
QY	347	TGACAGATGTTTTGATAGATCAGCCGCATTAATGTGTTAAATGCAACCTTAACCTTTTACT 406
DB	524	TAACCTACTGATTAATGTTAGATCATTCACAGAATGTGTTAAATGTAGACTTAACCTTTACT 583
QY	407	ATAATGCTGCTTCCTTAAGTGAAGCTCCTGGCGTTTAAGTTTAAAGTTTGGTGGTGGT 466
DB	584	ATAATGTAATAATGGTAATTAACCTTTCAATCCAGGTAAAGTTAATGCACACCTTGTG 643
QY	467	CCGCTGCAGGTGTGCTGCCGCTTACTAGTTAATGTGTGCTTCCCACTAACCAAAAACG 526
DB	644	CCGCAATTAACCTGCT-----AATG 664
QY	527	ATTCTCTGCGACATGAGTGCCTAAGCTAATTTAGCCACATTAATGTAGCAATTAATATGTC 586
DB	665	TTGCTTAAGCTACTTTAGGTAATGCTACATAACCGCATTAATGTAGCTTGCATGCC 724
QY	587	CTACTGCGACTGACTGTGATGAGTGACACTTGTGTTTAAATACATCAGCCACATTAAT 646
DB	725	CTGATGTACTATAAGTGTGCTGGAGT---AAATAATTTGGTAGCACAACACACTGAAT 781
QY	647	GTGTTAAATCGACACCTTAACCTTTACTATAATGCTGGTTCCTCTTAAGGTGAAGCTCCG 706
DB	782	GTACTAATGCTCTCACTTTACATTAATTAATGCTCTAAT----- 826
QY	707	CGGTTTAAGTTTTGTGCTGGTGGTGGCTGCGCTGAGGTGTTGCTGCGTTACTAGTTAAT 766
DB	827	-----TCAATCCAGGTAAATAGTACAT 847
QY	767	GTGTAACCTTCCCAATAAACAACGATTCCTCT---GCCACTGAGGTGCCTAAGCTA 823
DB	848	GCCTACTTCCCGACCAATAAAGATTAATGGTGTGCTGAAGCCACTGCAGGTGGTCCGCTA 907
QY	824	ATTTAGCCACATAATGCAGTACTTAATGTCCAACCTGCGACTGCAATTCGAAGCGAGTGA 883
DB	908	CTTTAGCCAAATAATGAATATTGCAATGCCCTGATGCTACTGCAATGCTAGTGGAGCAA 967
QY	884	CACCTGTTTTAGTAATTCATCCACATAATGTTCTTAATGCAATGCTAATTAATTTTAA 943
DB	968	CTAATTAATGTAATTTATAACAGAATGCTAAATGTGCTGCTAACTTTTATTATTGATG 1027
QY	944	ATGGTAATTTGGAAGCAGGTAAAGTTAATGTTTAAAGTGTCCAGTAAGTAAACT---A 1000
DB	1028	GTAATTAATTTCTAGCGAGGAAGTAGATGATGCAAGCATGTCCAGCAATAAAGTTTAAG 1087
QY	1001	CTCCAGCATGCTCCGAGTAATGCTACTTAAAGCCACATAATGTTTGGACCATGTC 1060
DB	1088	CGCCTGTAGCAACTGCAGGTGGTACTGCTACTTAAATTCATTAATGTGCCCTTGAATGCC 1147
QY	1061	CTGCTGGTACAGTACTTGATGATGGAACATCAACTAATTTTGTAGCTTCGCAACTGAAT 1120
DB	1148	CTGCTGGTACTGCTACTCACCAGTGAACAACATCTACTTATAAATAAGCAGCATCTGAAT 1207
QY	1121	GTACTAAATGTTCTGCTGCTTTTGTGCATCAAAAACACTGGTTTACAGCAGGTACTG 1180

DB	1208	GTGTTAAATGCTGCTGCCAACTTTTATACTACAAAATAAACTGATTTGGGTAGCAGGTATTG 1267
QY	1181	ATACATGTACTGAATGTACTATAAAAAATTAACCTTCTGGTCCACAGCTAAAGTATATGCTG 1240
DB	1268	ATACATGTACTAGTTGTAATAAAAAATTAACCTTCTGGCGCTGAAGCTAATTTACCTGAAT 1327
QY	1241	AAGCTACTCAAAAGTATTAATGGCCTCCACTACTTTCCCTAAATTTTATCGATTTCCT 1300
DB	1328	CTGCTAAAAAATAATATAATG-----TGAATTCGCTAATTTTTTATCAATTTTCCT 1378
QY	1301	TATTATTATTCTTTCTCTATTATT 1325
DB	1379	TATTATTGATTCTTATTATTATTATT 1403
RESULT 6		
AAA97038		
ID	AAA97038	standard; DNA; 1404 BP.
XX	AC	AAA97038;
XX	AC	AAA97038;
DT	18-DEC-2000	(first entry)
XX	55kd	i-antigen nucleotide sequence.
DE		
XX		
KW		Immobilisation antigen; i-antigen; Ichthyophthiriasis; vaccine; ds;
KW		white spot disease; freshwater fish; immune response; infection control.
XX		
OS		Ichthyophthirius multifiliis.
XX		
PN	WO200046373-A1.	
PD		
XX	10-AUG-2000.	
PF	04-FEB-2000;	2000WO-US02962.
XX		
PR	04-FEB-1999;	99US-01186634.
PR	02-MAR-1999;	99US-0123372.
PR	17-MAR-1999;	99US-0124905.
PR	27-APR-1999;	99US-0131121.
XX		
PA	(UYGE-)	UNIV GEORGIA RES FOUND INC.
PA	(CORR)	CORNELL RES FOUND INC.
PA	(CLAR/)	CLARK T G.
PA	(DICK/)	DICKERSON H W.
PA	(LINT/)	LIN T.
XX		
PI	Clark TG,	Dickerson HW, Lin T;
XX		
DR	WPI;	2000-506071/45.
XX		
PT	Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius	
PT	multifiliis, useful for prophylaxis and treatment of Ichthyophthirius	
PT	infection in fish -	
XX		
PS	Claim 5; Figure 3;	144pp; English.
XX		
CC	This invention relates to novel i-antigen polypeptide sequences.	
CC	I-antigens or immobilisation antigens ar common to a variety of	
CC	hymenostomatid ciliates and their expression varies in response to	
CC	environmental stimuli. This invention relates to i-antigens in	
CC	Ichthyophthirius multifiliis, a protozoan which is an obligate parasite	
CC	of freshwater fish causing ichthyophthiriasis or white spot disease. The	
CC	invention includes two polypeptide and polynucleotide sequences for two	
CC	i-antigens, of 48 and 55 kD. Also included in the invention are	
CC	antibodies capable of binding to the nucleotide sequences and a method	
CC	for identifying I. multifiliis serotypes using the nucleotide sequences.	
CC	A composition (containing the i-antigen nucleotide) capable of eliciting	
CC	an immune response in fish is useful for prophylaxis, treatment or for	
CC	controlling I. multifiliis infection in fish. Polynucleotide or protein	
CC	vaccines comprising a portion of the amplified product encoding an	
CC	antigenic i-antigen polypeptide obtained is also useful for treating or	
CC	preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,	





an immune response in fish is useful for prophylaxis, treatment or for controlling *I. multifiliis* infection in fish. Polynucleotide or protein vaccines comprising a portion of the amplified product encoding an antigenic i-antigen polypeptide obtained is also useful for treating or preventing *I. multifiliis* infection in fish. Sequences AA97036-A97042, and AA97060, AA97065 and AA97089 represent i-antigen genes and gene fragments identified in the invention. Sequences AA97043-A97064 (excluding AA97060) and AA97071-A97088 represent primers used in the isolation of the i-antigen gene sequences. Sequences AAB25853-B25889 and AAB25893-B25906 represent i-antigen protein and peptide sequences.

SQ Sequence 1410 BP; 449 A; 240 C; 259 G; 462 T; 0 other;

Query Match 19.0%; Score 252.6; DB 21; Length 1410;  
Best Local Similarity 56.7%; Pred. No. 6.4e-49;  
Matches 660; Conservative 0; Mismatches 394; Indels 111; Gaps 6;

Qy	167	GTGTCGCTTAAAGGAGAAGCTAATGGTAATTAACCTTTTCGCAGCAAAATAAATGCTGCTAGAG	226
Db	344	GTCTTAATTTTGAATAATTTTTTATATAAGAAAATGCTCCAAATTTTAATCGAGGTGCTA	403
Qy	227	GTATATGTGTACCATGCCAAATAACAGAGTAGGCTCTGTTTACC AATGCAGGTGACHTTAG	286
Db	404	GTACATGCACACCTTGTCCGGTAACAGAGTGGTGGTGCATTGACTGCTGGTAATGCCG	463
Qy	287	CTACTTTTAGCCACATAATATGCAGTAGTACTTAATGTCTCTACTGGCACCTGCACCTTGATGATGGAG	346
Db	464	CTACCATAGTCGCAATAATGTAACGTGCGATGCTCTACTGGTACTGCACCTTGATGATGGAG	523
Qy	347	TGACAGATGTTTTTCATAGATCAGCCGCATATATGTGTTTAAATGCAAACTTAACCTTTTACT	406
Db	524	TAACTACTGATTATGTTTAGATTCATTCACAGAATGTTTAAATGTAGACTTAACCTTTTACT	583
Qy	407	ATAATGGTGGTTCCTCTTAAGGTGAAGCTCCCTGGGTTTTAAGTTTTGCTGCTGGTGGCTG	466
Db	584	ATAATGGTAATAATGGTAATATACCTCTTC AATCCAGGTA AAGTTTAATGCACACCTTGTC	643
Qy	467	CGCGTGCAGGTGTGCTGCGGTTTACTAGTTAATGTGTACCTTGC CAACTAAACAAAAGC	526
Db	644	CGGCAATTAACCTGCT-----AATG	664
Qy	527	ATTCTCTCGCCACTGCAGGTGCCTAAGCTAATTTAGCCACATATATGTAGCAATTAATGTC	586
Db	665	TTGCTTTAAGCTTACTTTAGTTAATGATGCTACAAATACCCGCATAATATGAAGTTTGCATGCC	724
Qy	587	CTACTGGCACGTACTTGATGGATGGAGTGACACTTTGTTTTTAATACATCAGCCACATAT	646
Db	725	CTGATGGTACTATAAGTGTCTGCTGGAGT---AAATAATGGGTAGCAAAACACTGAT	781
Qy	647	GTGTTTAAATGCAGACCTTAACCTTTTACTATAATGGTGGTCTCTCTTAAGGTGAAGCTCCG	706
Db	782	GTACTAATTTGTCCTTAACCTTTTACAATAATAATGCTCTAAT-----826	
Qy	707	GGCTTTAAGTTTTTGTGCTGGTGGCTGCGCGTGTGTGCGGTTTACTAGTTAAT	766
Db	827	-----TC AATCCAGGTAATAGTACAT	847
Qy	767	GTGTACTTTGCCAAATAACAAAACGATTCTCTCT---GCCACTGAGGTGCTCAAGCTA	823
Db	848	GCCTACCTTGC CCAGCAATAAAGATATATGGTGTGAAGCCACTGCAGGTGGTGGCGCTA	907
Qy	824	ATTTAGCCACATAATGCAGTACTTAATGTCCAACCTGGCACTGCAATTC AAGACGGAGTGA	883
Db	908	CTTTTAGCCAAATAATGTAATATTGCATGCCCTGATGGTACTGCAATTGTCTGGAGCA	967
Qy	884	CACTTGTTTTTAGTAATTCATCCACATAATGTTCTTAAATGCATTGCTAATTTACTTTTTTA	943
Db	968	CTAATATGTAATTTATATAACAGAAATGCTCTAAAATTTGCTGCTAATTTTATTTTGATG	1027
Qy	944	ATGCTAATTTTCGAAGCAGGTA AAGCTTAATGTTTAAAGTGTCCAGTAAAGTAAACT---A	1000
Db	1028	GTAATAATTTCTAGGCAGGAAGTAGTAGTGAAGCATGTGCAGCAATAAAGTTTAAG	1087

CC invention includes two polypeptide and polynucleotide sequences for two  
CC i-antigens, of 48 and 55 kD. Also included in the invention are  
CC antibodies capable of binding to the nucleotide sequences and a method  
CC for identifying I. multifiliis serotypes using the nucleotide sequences.  
CC A composition (containing the i-antigen nucleotide) capable of eliciting  
CC an immune response in fish is useful for prophylaxis, treatment or for  
CC vaccines comprising a portion of the amplified product encoding an  
CC antigenic i-antigen polypeptide obtained in fish. Sequences AAA97036-A97042,  
CC preventing I. multifiliis infection in fish. Sequences AAA97043-A97064  
CC and AAA97065 and AAA97089 represent i-antigen genes and gene  
CC fragments identified in the invention. Sequences AAA97043-A97064  
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the  
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and  
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.  
CC Sequences AAA97066-A97070 and AAB25890-B25892 represent i-antigen  
CC sequences from Giardia lamblia used in the identification of the I.  
CC multifiliis i-antigen sequences of the invention.  
XX Sequence 100 BP; 28 A; 18 C; 10 G; 44 T; 0 other;  
SQ  
Query Match 7.5%; Score 100; DB 21; Length 100;  
Best Local Similarity 100.0%; Pred. No. 6.8e-14;  
Matches 100; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1227 TAAAGTATATGCTGAAGCTACTCAAAAAGTATAATGCGCTCCACTACTTTTCGCTAAATT 1286  
Db 1 TAAAGTATATGCTGAAGCTACTCAAAAAGTATAATGCGCTCCACTACTTTTCGCTAAATT 60  
QY 1287 TTTATCGATTTCCTTATTATTATTCTTTCTATTATTG 1326  
Db 61 TTTATCGATTTCCTTATTATTATTCTTTCTATTATTG 100  
RESULT 9  
AAA97070  
ID AAA97070 standard; cDNA; 119 BP.  
XX  
AC AAA97070;  
XX  
DT 18-DEC-2000 (first entry)  
DE I-antigen encoding cDNA 1-1.  
XX  
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;  
KW white spot disease; freshwater fish; immune response; infection control.  
XX  
OS Giardia lamblia.  
XX  
PN WO200046373-A1.  
XX  
PD 10-AUG-2000.  
XX  
PF 04-FEB-2000; 2000WO-US02962.  
XX  
PR 04-FEB-1999; 99US-0118634.  
PR 02-MAR-1999; 99US-0122372.  
PR 17-MAR-1999; 99US-0124905.  
PR 27-APR-1999; 99US-0131121.  
XX  
XX (UYGE-) UNIV GEORGIA RES FOUND INC.  
PA (CORR ) CORNELL RES FOUND INC.  
PA (CLARK/) CLARK T G.  
PA (DICK/) DICKERSON H W.  
XX (LINT/) LIN T.  
PI Clark TG, Dickerson HW, Lin T;  
XX WPI; 2000-506071/45.  
XX  
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius  
XX multifiliis, useful for prophylaxis and treatment of Ichthyophthirius  
XX infection in fish -  
XX  
XX Disclosure; Figure 7; 144pp; English.  
XX  
XX

CC This invention relates to novel i-antigen polypeptide sequences.  
CC I-antigens or immobilisation antigens are common to a variety of  
CC hymenostomatid ciliates and their expression varies in response to  
CC environmental stimuli. This invention relates to i-antigens in  
CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite  
CC of freshwater fish causing ichthyophthiriasis or white spot disease. The  
CC invention includes two polypeptide and polynucleotide sequences for two  
CC i-antigens, of 48 and 55 kD. Also included in the invention are  
CC antibodies capable of binding to the nucleotide sequences and a method  
CC for identifying I. multifiliis serotypes using the nucleotide sequences.  
CC A composition (containing the i-antigen nucleotide) capable of eliciting  
CC an immune response in fish is useful for prophylaxis, treatment or for  
CC vaccines comprising a portion of the amplified product encoding an  
CC antigenic i-antigen polypeptide obtained in fish. Sequences AAA97036-A97042,  
CC preventing I. multifiliis infection in fish. Sequences AAA97043-A97064  
CC and AAA97065 and AAA97089 represent i-antigen genes and gene  
CC fragments identified in the invention. Sequences AAA97043-A97064  
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the  
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and  
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.  
CC Sequences AAA97066-A97070 and AAB25890-B25892 represent i-antigen  
CC sequences from Giardia lamblia used in the identification of the I.  
CC multifiliis i-antigen sequences of the invention.  
XX Sequence 119 BP; 38 A; 19 C; 12 G; 50 T; 0 other;  
SQ  
Query Match 7.5%; Score 99; DB 21; Length 119;  
Best Local Similarity 100.0%; Pred. No. 1.2e-13;  
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1228 AAAGTATATGCTGAAGCTACTCAAAAAGTATAATGCGCTCCACTACTTTTCGCTAAATT 1287  
Db 1 AAAGTATATGCTGAAGCTACTCAAAAAGTATAATGCGCTCCACTACTTTTCGCTAAATT 60  
QY 1288 TTATCGATTTCCTTATTATTATTCTTTCTATTATTG 1326  
Db 61 TTATCGATTTCCTTATTATTATTCTTTCTATTATTG 99  
RESULT 10  
AAA97069  
ID AAA97069 standard; cDNA; 162 BP.  
XX  
AC AAA97069;  
XX  
DT 18-DEC-2000 (first entry)  
DE I-antigen encoding cDNA 1-3.  
XX  
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;  
KW white spot disease; freshwater fish; immune response; infection control.  
XX  
OS Giardia lamblia.  
XX  
PN WO200046373-A1.  
XX  
PD 10-AUG-2000.  
XX  
PF 04-FEB-2000; 2000WO-US02962.  
XX  
PR 04-FEB-1999; 99US-0118634.  
PR 02-MAR-1999; 99US-0122372.  
PR 17-MAR-1999; 99US-0124905.  
PR 27-APR-1999; 99US-0131121.  
XX  
XX (UYGE-) UNIV GEORGIA RES FOUND INC.  
PA (CORR ) CORNELL RES FOUND INC.  
PA (CLARK/) CLARK T G.  
PA (DICK/) DICKERSON H W.  
XX (LINT/) LIN T.  
PI Clark TG, Dickerson HW, Lin T;  
XX

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XX DR WPI; 2000-506071/45.
XX PA Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
XX PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
XX PT infection in fish
XX PS Disclosure; Figure 7; 144pp; English.
XX CC This invention relates to novel i-antigen polypeptide sequences.
XX CC I-antigens or immobilisation antigens are common to a variety of
XX CC hymenostomatid ciliates and their expression varies in response to
XX CC environmental stimuli. This invention relates to i-antigens in
XX CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
XX CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
XX CC invention includes two polypeptide and polynucleotide sequences for two
XX CC i-antigens, of 48 and 55 kD. Also included in the invention are
XX CC antibodies capable of binding to the nucleotide sequences and a method
XX CC for identifying I. multifiliis serotypes using the nucleotide sequences.
XX CC A composition (containing the i-antigen nucleotide) capable of eliciting
XX CC an immune response in fish is useful for prophylaxis, treatment or for
XX CC controlling I. multifiliis infection in fish. Polynucleotide or protein
XX CC vaccines comprising a portion of the amplified product encoding an
XX CC antigenic i-antigen polypeptide obtained is also useful for treating or
XX CC preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,
XX CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
XX CC fragments identified in the invention. Sequences AAA97043-A97064
XX CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
XX CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
XX CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX CC Sequences AAA97066-A97070 and AAB25890-B25892 represent i-antigen
XX CC sequences from Giardia lamblia used in the identification of the I.
XX CC multifiliis i-antigen sequences of the invention.
XX SQ Sequence 162 BP; 54 A; 19 C; 14 G; 75 T; 0 other;

Query Match 7.5%; Score 99; DB 21; Length 162;
Best Local Similarity 100.0%; Pred. No. 1.4e-13;
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1228 AAAGTATATGCTGAAGCTACTCAAAAGATATATGCGCTCCACTACTTCGCTAAATTT 1287
DB 1 AAAGTATATGCTGAAGCTACTCAAAAGATATATGCGCTCCACTACTTCGCTAAATTT 60

QY 1288 TTATCGATTTCCTTATTATTATTTCTTCTATTATTG 1326
DB 61 TTATCGATTTCCTTATTATTATTTCTTCTATTATTG 99

RESULT 11
AAA97068
ID AAA97068 standard; cDNA; 199 BP.
XX
XX AAA97068;
AC
XX
XX 18-DEC-2000 (first entry)
DT
XX
XX 48kD i-antigen RACE amplification product.
DE
XX
XX Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;
KW white spot disease; freshwater fish; immune response; infection control.
KW
OS Giardia lamblia.
XX
XX WO200046373-A1.
PN
XX
XX 10-AUG-2000.
PD
XX
XX 04-FEB-2000; 2000WO-US02962.
PF
XX
XX 04-FEB-1999; 99US-0118634.
PR
XX 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.

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PR 27-APR-1999; 99US-0131121.
XX
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (CORR ) CORNELL RES FOUND INC.
PA (CLAR/) CLARK T G.
PA (DICK/) DICKERSON H W.
PA (LINT/) LIN T.
XX
XX Clark TG, Dickerson HW, Lin T;
PI WPI; 2000-506071/45.
XX
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
XX multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
XX infection in fish
XX PS Disclosure; Figure 7; 144pp; English.
XX CC This invention relates to novel i-antigen polypeptide sequences.
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XX CC hymenostomatid ciliates and their expression varies in response to
XX CC environmental stimuli. This invention relates to i-antigens in
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XX CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
XX CC invention includes two polypeptide and polynucleotide sequences for two
XX CC i-antigens, of 48 and 55 kD. Also included in the invention are
XX CC antibodies capable of binding to the nucleotide sequences and a method
XX CC for identifying I. multifiliis serotypes using the nucleotide sequences.
XX CC A composition (containing the i-antigen nucleotide) capable of eliciting
XX CC an immune response in fish is useful for prophylaxis, treatment or for
XX CC controlling I. multifiliis infection in fish. Polynucleotide or protein
XX CC vaccines comprising a portion of the amplified product encoding an
XX CC antigenic i-antigen polypeptide obtained is also useful for treating or
XX CC preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,
XX CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
XX CC fragments identified in the invention. Sequences AAA97043-A97064
XX CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
XX CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
XX CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX CC Sequences AAA97066-A97070 and AAB25890-B25892 represent i-antigen
XX CC sequences from Giardia lamblia used in the identification of the I.
XX CC multifiliis i-antigen sequences of the invention.
XX SQ Sequence 199 BP; 83 A; 19 C; 13 G; 84 T; 0 other;

Query Match 7.5%; Score 99; DB 21; Length 199;
Best Local Similarity 100.0%; Pred. No. 1.4e-13;
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1228 AAAGTATATGCTGAAGCTACTCAAAAGATATATGCGCTCCACTACTTCGCTAAATTT 1287
DB 1 AAAGTATATGCTGAAGCTACTCAAAAGATATATGCGCTCCACTACTTCGCTAAATTT 60

QY 1288 TTATCGATTTCCTTATTATTATTTCTTCTATTATTG 1326
DB 61 TTATCGATTTCCTTATTATTATTTCTTCTATTATTG 99

RESULT 12
AAA97067
ID AAA97067 standard; DNA; 202 BP.
XX
XX AAA97067;
AC
XX
XX 18-DEC-2000 (first entry)
DT
XX
XX 48kD i-antigen gene sequence.
DE
XX
XX Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;
KW white spot disease; freshwater fish; immune response; infection control.
KW
XX Giardia lamblia.
XX
XX

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QY	225	AGGTATATGTTACCATGCCAAATAAACACAGTAGTGGCTCTGTTACCAATGCAGGTGACTT	284
Db	1361		
QY	285	TGCTGGTGCTGTGGGAAGTGATGGTGATGGTGGTGGTGGTGGTGGTAGTGGTGGTAG	1302
Db	1301		
QY	345	AGTGACAGATGTTTTTTGATAGATCAGCCGCATTAATGTGTTAAATGCAAACCTAACCITTTA	404
Db	1241		
QY	405	CTATAATCGTGGTTCCTCTTAAGGTGAAGCTCCTGGCGTTTAAAGTTTTTGGTGGTGGTGC	464
Db	1181		
QY	465	TGCCCTGCAGGTCTTGGTCCCGTTACTAGTTAATGCTGTACCTTGCCAACCTAAACA AAAA	524
Db	1121		
QY	525	CGATTCTCCTGCCACTCCAGGTCGCCCTAAGCTAAATTTAGCCACATAATGTAGCAATTAATG	584
Db	1061		
QY	585	TCCTACTGGCACACTACTCTGATGCATGCAGTGACACTTGGTTTTTAATACATCAGCCACATT	644
Db	1001		
QY	645	ATGTGTTAAATGACAGACCTAACTTTTACTATAATGGTGGTTCTCCTTAAGGTGAAGCTCC	704
Db	941		
QY	705	TGGCGTTTAAAGTTTTTGGTCTGGTGCTGCCCGCTGCAGGCTTGGTCCCGTTACTAGTTA	764
Db	881		
QY	765	ATGTG 769	822
Db	821		
RESULT 14			
ABA67865/c			
ID	ABA67865 standard; DNA; 1635 Bp.		
XX	ABA67865;		
AC			
XX			
DT	01-FEB-2002 (first entry)		
XX			
DE	Human foetal liver single exon nucleic acid probe #16170.		
XX			
KW	Human; foetal liver; gene expression; single exon nucleic acid probe; s		
XX			
OS	Homo sapiens.		
XX			
PN	WO200157277-A2.		
XX			
PD	09-AUG-2001.		
XX			
Pf	30-JAN-2001; 2001WO-US00669.		
XX			
PR	04-FEB-2000; 2000US-0180312.		
XX			
PR	26-MAY-2000; 2000US-0207456.		
XX			
PR	30-JUN-2000; 2000US-0608408.		
XX			
PR	03-AUG-2000; 2000US-0632366.		
XX			
PR	21-SEP-2000; 2000US-0234687.		
XX			
PR	27-SEP-2000; 2000US-0236359.		
XX			
PR	04-OCT-2000; 2000GB-0024263.		
XX			
PA	(MOLE-) MOLECULAR DYNAMICS INC.		
XX			
PI	Penn SG, Hanzel DK, Chen W, Rank DR;		
XX			

DR	WPI; 2001-483447/52.
XX	
PT	Human genome-derived single exon nucleic acid probes useful for
PT	analyzing gene expression in human fetal liver -
XX	
PS	Claim 4; SEQ ID NO 16170; 639pp + sequence listing; English.
XX	
CC	The invention relates to a single exon nucleic acid probe for
CC	measuring human gene expression in a sample derived from human foetal
CC	liver. The single exon nucleic acid probes may be used for predicting,
CC	measuring and displaying gene expression in samples derived from human
CC	fetal liver. The present sequence is a single exon nucleic acid
CC	probe of the invention.
CC	Note: The sequence data for this patent did not form part of the
CC	printed specification, but was obtained in electronic format directly
CC	from WIPO at ftp.wipo.int/pub/published_pct_sequences.
XX	
SQ	Sequence 1635 BP; 538 A; 916 C; 18 G; 163 T; 0 other;
	Query Match            5.48; Score 72.2; DB 22; Length 1635;
	Best Local Similarity 43.7%; Pred. No. 4.6e-07;
	Matches 317; Conservative 0; Mismatches 408; Indels 0; Gaps 0;
QY	45 TAATGAATTAAGAGCTGTTCACATGCTCGTGTGACTTTACAGTCAAGCTGGATTGACTGA 104
DB	1541 TAGTGATGGTGGTGGTGGTAGTGATGGTGCCTGGTGGTAGTGGTGGTAGTGA 1482
QY	105 TGTAGGTGCTGCTGANTCTTGGTACTTGTGTTAAATTCAGACCTAATTTTTACTATAATGS 164
DB	1481 TGGTGGTGGTGGTGGTGGTGAAGTATGGTATGGTGGTGGTGGTGGTGGTATGATCG 1422
QY	165 TGGTGCTGCTTAAGAGAAGCTAATGTGTAATTAACCTTTTCGACAGCAAATAATCCTGCTAG 224
DB	1421 TGGTGGTGGTGGTGGTGGTGAAGTATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG 1362
QY	225 AGGTATATGTGTACCATTGCCAAATAAACAGAGTAGGCTCTGTTACCAATGCCAGGTGACATT 284
DB	1361 TGTTGGTGGTGGTGGTGGTGAAGTATGGTATGGTGGTGGTGGTGGTGGTGGTGGTGGTGG 1302
QY	285 AGCTACTTTTAGCCACATAATGCAGTACTTAACTCTACTTGGCACATGCACCTTGATGATGG 344
DB	1301 TGGTGATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG 1242
QY	345 AGTGACAGATGTTTTTGATAGATCAGCCGCATTAATGTTAAATGCACCACTTAACCTTTTA 404
DB	1241 TAGTGATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG 1182
QY	405 CTATAAATGGTGGTTCCTTTAAGGTGAAGCTCCTGGCGTTAAGTTTTGCTGCTGGTGGC 464
DB	1181 TGG 1122
QY	465 TGGCGCTGCAGGTGTTGCTGCCCTTACTAGTTAATGTACCTTGCCAACATAACAACAAA 524
DB	1121 TGG 1062
QY	525 CGATTCTCTGCCACTGCAGCGCCCTAAGCTAATTTAGCCACATTAATGTAGCAATTAATG 584
DB	1061 TGG 1002
QY	585 TCCTACTGGCACGTACTTATGATGAGTGGAGTGCACCTTGTTTTTAATACATCAGCCACATT 644
DB	1001 TGATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG 942
QY	645 ATGTGTTAATGCAGACCTTAACCTTTTACTATAATGGTGGTCTCCTTAAGGTGAAGCTCC 704
DB	941 TGG 882
QY	705 TGGCGTTTAAGTTTTGCTGCTGGTGCCTGCCCTGCAGGTGTTGCTGCCGTTACTAGTTA 764
DB	881 TGGTAGTGATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG 822
QY	765 ATGTG 769

